(vs. 1–4 sporocarps 4–6 mm long, angled in cross section, with several lateral ribs, and on proximal ¼ of the stipes).

Thelypteris interrupta was previously cited for this same region by Baker (in Martius, Flora Brasiliensis v. 2, part 1: 486–487, t. 30, fig. 13. 1870) and by Andrade-Lima (Anais XX Congr. Nac. Bot.: 33–39. 1969) as *Nephrodium unitum* R. Br., and by Barros et al. (1989b, op. cit.) as *Thelypteris totta* (Thunb.) Schelpe. This species is recognized by its long-creeping rhizomes, proximal pinnae the longest or nearly so, basal veins from adjacent segments united at an obtuse angle below the sinus with an excurrent vein to the sinus, and laminae chartaceous to subcoriaceous, 1-pinnate-pinnatifid, abaxially with sessile reddish glands.

Acrostichum danaeifolium was previously cited by Baker (in Martius, 1870, op. cit.) as common and widespread in Brazil, but its occurrence in Pterolina could be, in fact, a new record.

I am greatful to Dr. Alan R. Smith for constructive comments on the manuscript.—Jefferson Prado, Instituto de Botânica, Seção de Briologia e Pteridologia, C. P. 4005, 01061-970 São Paulo – SP, Brazil.

***Diellia mannii* (D. C. Eaton) Robins. (Aspleniaceae) Rediscovered in Hawai'i.**—*Diellia mannii* (D. C. Eaton) Robins. is a rare endemic species of the island of Kauai. It was first collected by H. Mann and W. T. Brigham as *Microlepia mannii* D. C. Eaton (Mann, Enumeration of Hawaiian plants. Proc. Amer. Acad. Arts and Sci. 7, 1867) sometime between 1864 and 1865. Last known collections were probably made by V. Knudsen during the period 1871–1886. About 24 collected specimens of *D. mannii* are deposited in different herbaria around the world. Some of those may originate from the same individuals (Wagner, Univ. Calif. Publ. Bot. 26:1–167, 1952). Although these collections provide little information about exact sites and habitats, all the specimens probably were collected in Western Kauai in the general area of Halemanu, in dry or mesic forests on the steep slopes of gulches, at an altitude of 500–1000 m (Wagner, Wagner & Flynn, Contr. Univ. Michigan Herb. 20: 241–260, 1995).

Diellia mannii has probably always been a rare and very local fern species. Already in 1902, Diels (Polypodiaceae, pp. 139–339 in Engler & Prantl *Die natürlichen Pflanzenfamilien* Bd.1 (Abt.4), Verlag von Wilhelm Engelmann, Leipzig) referred to it as a rarity of Kauai. The note of A. S. Knudsen from 1914 (Wagner et al., 1995) included mention of *D. mannii* as a very rare fern that has almost disappeared from the Halemanu in Koke'e Mountains. The status of the species has been assessed as probably extinct (Fosberg & Herbst, Allertonia 1: 1–72. 1975; Wagner, Wagner, Palmer & Hobdy, Contr. Univ. Michigan Herb. 22: 135–187. 1999), not seen after 1900 (Wagner et al. 1999; U.S. Fish & Wildlife Service species List. 2000), but considered to be a species of concern as "further field research may reveal that *D. mannii* still exists somewhere in western Kauai" (Wagner et al., 1995). On April 23, 2002, a single individual of *D. mannii* was found by resource conservation technician Laura Arnold

FIG. 1. Habit view of *Diellia mannii* in Halemanu.

(Koke'e Resource Conservation Program) during forest weeding work in Halemanu, Koke'e State Park.

The only known individual of *Diellia mannii* is growing on a steep (ca 40°–45°) northwest-facing slope just above a gulch bottom at an altitude of 1050 m. The natural community was at one time most likely dominated by an *Acacia-Metrosideros* montane mesic forest. Currently, the original vegetation has been degraded and the area is dominated by *Corynocarpus laevigatus* J. R. Forster & G. Forster. A few native trees (*Acacia koa* A. Gray, *Metrosideros polymorpha* Gaud., *Hedyotis terminalis* (Hook. & Arnott) W. L. Wagner & Herbst, *Nestegis sandwicensis* (A. Gray) Degener, I. Degener & L. Johnson and *Coprosma waimea* Wawra) are also present but of these, only *A. koa* has seedlings. Canopy coverage is ca 75%. The understory is sparse, with a coverage of ca 15%, consisting mainly of ferns and some grasses (*Panicum nephelophilum* Gaud.). *Diellia mannii* grows in the middle part of the slope where *Asplenium macraei* Hook. & Grev. is the most frequent pteridophyte species. Less commonly native *Athyrium microphyllum* (Sm.) Alston, *Doodia kunthiana* Gaudich., *Dryopteris glabra* (Brack.) Kuntze and *Microlepia strigosa* (Thunb.)

C. Presl, and the naturalized *Blechnum glandulosum* Link and *Christella parasitica* (L.) H. Lév. were also found. The soil is silty with decomposing basalt, dry to moderately moist and sparsely covered with leaf litter. Suitable habitat conditions for *D. mannii* cover an area of ca 100–200 m^2.

In June of 2002, the *Diellia mannii* plant had five slightly arching, finely dissected fronds of 20–36 cm in length. Of these, two were older and senescent, three were younger and one was still uncurling. Like other species of *Diellia*, it had persistent stipe bases. Stipes were 2–3 mm in diameter and densely covered with tan-brown clathrate scales. Pinnae of erect young fronds were nearly perpendicular to the rachis. According to Wagner's 1952 description basal pinnules should be somewhat shorter than median pinnules. On this individual the basal pinnules were larger than the median pinnules and the pinnae were more elongate triangular than lanceolate, as per the original description of Mann (1867) and specimens described by Hillebrand as *D. knudsenii* var. α (Hillebr.) Diels and *D. knudsenii* var. β Hillebr. (Hillebrand, *Flora of the Hawaiian Islands. A description of their phanerogams and vascular cryptogams.* London, New York, Heidelberg, 1888; Diels, 1902).

The only individual of *Diellia mannii* in Halemanu is healthy and fertile. Unfortunately no other individuals at any life stage have been found in the area, despite a thorough search. Whereas the principal associate species, the highly variable and finely dissected *A. macraei*, is present in all life-stages. *Asplenium macraei* becomes fertile at quite an early age—young and small individuals having fronds with linear sori. Juvenile individuals of *D. mannii* have never been found. On the basis of previous research (Aguraiuja, CBM:s Skriftserie 3:7–24. 2000), it is hypothesized that juvenile *D. mannii* has much longer fronds than young fertile *A. macraei* and so it should be relatively easy to differentiate between the individuals of these two species in their early life stages.

The main threats to *Diellia mannii* include trampling of the forest understory and possible herbivory by introduced feral deer and pigs; spatial competition with non-native species such as *Blechnum glandulosum*, *Christella parasitica*, *Rubus argutus* Link and *Erharta stipoides* Labill., which possess the ability to spread rapidly and effectively cover large areas in the forest understory; catastrophic extinction through environmental events; and reduced reproductive vigour as the result of limited numbers of existing individuals. Considering the highly endangered status of *D. mannii* the surrounding area should be fenced. Efforts for the monitoring and propagation of this fern should be supported.

This study was financed by the Estonian Science Foundation (grant No. 4468 to M. Zobel). We thank Koke'e Natural History Museum and Koke'e Resource Conservation Program for their kind support.—R. AGURAIUJA, Institute of Botany and Ecology, University of Tartu; Tallinn Botanic Garden, Kloostrimetsa tee 52, Tallinn 11913, Estonia and K. R. WOOD, National Tropical Botanical Garden, Department of Conservation, 3530 Papalina Road, Kalaheo, Kaua'i, Hawai'i 96741.